

How to beat China? Think 3 steps ahead!

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Speaker: Alain Decloedt



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Agenda

- E.D.&A.
- How to beat China? Think 3 steps ahead!
 - ✓ Challenges in OEM electronics
 - ✓ "Design smartly in order to produce smartly"
 - ✓ The approach of E.D.&A.
 - ✓ Summary

E.D.&A.

Electronics, Development & Assembly

- Founded in 1981
- HQ Located in Belgium, Kalmthout (Antwerp)
- Sales office in Bonn, Germany
- 80+ employees (37 on R&D)
- E.D.&A. develops and produces custom-made electronic controllers for machines and appliances.
 - Industrial market
 - Consumer market



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Challenges in OEM electronics?

- Flexibility
- Delivery reliability
- Quality
- Time-to-market
- Price

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Challenges in OEM electronics

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How is China?



What is required by the market?



Lead times? Batch sizes? Quality? Flexibility?



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Pay-off E.D.&A.: "Design smartly in order to produce smartly"

Involve all departments at the start of the project! Ask yourself:

- What?
- How?
- Who?
- Why?
- When?



What to do?

- For development: apply DFM and DFT techniques
- For production: digitalise and automate your processes

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“Design smartly”

Design For Manufacturing (DFM)

- Optimize your design to the production facilities and processes.
- Re-use proven technology and minimize your component database.
- Define the optimal component placement for SMD, THT and coating processes.
- Think further than common solutions:



Result?

- Less overhead, better purchase conditions, less risks, etc.
- Reduces your time-to-market (less design iterations).

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“Design smartly”

Design For Test (DFT)

- How to test your product? Think ahead!
- Select the right test system for the quantities you have to produce.
- Design in test pads at early stage during prototypes.
- Define your test coverage. Go for 100% quality but ...
do not test too much.

Result?

- Optimal test coverage at the best price.
- High quality output.



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“Produce smartly”

- Automate your production process as much as possible.
- Automate “boring” repetitive actions.

Result?

- Employees can do the more challenging jobs and will be more motivated.
- Quality level increases at less labour costs.



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How to beat China? Think 3 steps ahead!

“Produce smartly”

- Implement Lean manufacturing. (smaller “Lean” batches).
- Implement QRM (Quick Response Manufacturing).
- Execute automatic verification after each production step.

Result?

- Higher delivery flexibility. Easier to switch tasks and products.
- Rejected items are reduced, less rework.
- Increase your First Pass Yield.



3D AOI after SMD

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How to beat China? Think 3 steps ahead!

“Produce smartly”

- Digitize your processes.
- Avoid paper work.
- Avoid manual handlings.

Result?

- Less faults and higher quality output.
- Less overhead which results in lower costs.



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The approach of E.D.&A.

- E.D.&A. started the digital transformation in 2014.
- Multidisciplinary team during project kick off meeting to integrate DFM and DFT.
- Continuously improvements on automation.

Result?

- E.D.&A. is a 'Factory of The Future' since 2016 and was re-awarded in 2019.
- We are able to be price competitive with high added value to our customers.



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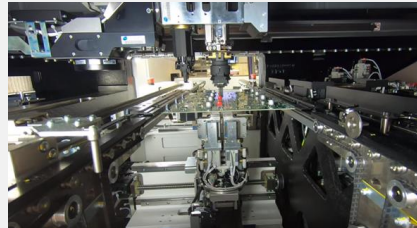
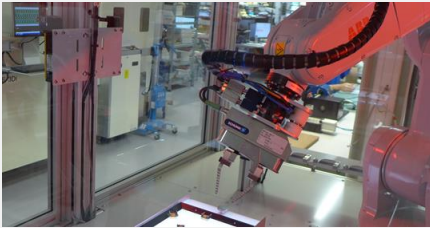
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The approach of E.D.&A.

Example 2 of digitalization:

- Manual handling of THT components replaced by robots.



Result?

- “Boring” repetitive man hours were automated.
- Personnel were trained to operate the machines instead.
- Higher quality output against lower costs.

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The approach of E.D.&A.

Example 3 of digitalization:

- Manual testing of products replaced by automated Inline Function Test.



Result?

- “Boring” repetitive man hours were automated.
- Personnel were trained to operate the machines instead.
- Higher quality output against lower costs.

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Summary

How to become the speedboat?

- Flexibility >>> Lean Manufacturing, QRM
- High quality >>> DFT, automation and digitalization
- Shorter time-to-market >>> DFM, DFT, Multi discipliner team, proven technology
- Reliability >>> DFT, DFM
- Motivated personnel >>> automation and digitalization, less “boring” jobs

-> Finally this will result in Eastern competitive prices with all extra advantages!



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Thank you for your attention

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A hand is shown pointing towards the center of the frame, with the index finger extended. The background is a light blue gradient with a faint circuit board pattern. The text 'ed&a' is centered in the upper half, and 'Q&A' is centered below it. The bottom of the image features a solid blue bar with a white circuit pattern and contact information.

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